

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF CONSERVATION
DIVISION OF FORESTRY

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the State Forester's 1965 REPORT

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EDMUND G. BROWN
Governor

THE STATE BOARD OF FORESTRY

HUGO FISHER
Administrator

The California Resources Agency

DE WITT NELSON
Director

Department of Conservation

ANNUAL REPORT

of the

CALIFORNIA DIVISION OF FORESTRY

for 1965

F. H. RAYMOND
State Forester

The State Board of Forestry

Whitford B. Carter, Chairman
Lancaster

Paul Aurignac
San Ardo

Leslie O. Cody
Red Bluff

Philip Abrams
Palm Springs

E. P. Ivory
Dinuba

Kelly B. McGuire
Ft. Bragg

Frank C. Myers
Fallbrook

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THE STATE BOARD OF FORESTRY

The California State Board of Forestry held eight official meetings during 1965. The chairman and individual members contributed much additional time in committee duties, attendance at special hearings and other events related to the civic welfare. The meeting of October 26 was held jointly with the Correctional Industries Commission at the new Sierra Conservation Center near Jamestown, Tuolumne County.

Mr. Philip Abrams of Palm Springs on March first assumed membership on the Board as a representative of water use in the position vacated by Peter J. Cormack.

Among the topics of direct interest to the Board was the damage caused by severe North Coast floods to Division facilities and the flood's impact upon the lumbering industry in that region. Legislative matters were considered and especially Senate Bill 807 which proposed to specify the procedures to be followed in declaring mature and taxable those formerly immature timber trees exempted from taxation under the State Constitution. In this respect the Board heard important testimony from several specialists in the very complex field of forest taxation.

Once more the Board approached the State Park Commission to induce them to acquire the Reynolds Redwood Flat. It also heard testimony from interested civic and community leaders of the North Coast in regard to the economic factors bearing upon the extensive addition of parks in that area. The Board formally commended Governor Brown and Resources Agency Administrator Fisher for establishing a task force to give the problem serious study.

In August the Board welcomed Dr. John Zivnuska, Dean of the School of Forestry, as an honorary member of the Board of Forestry in keeping with the custom of some twenty years. In January the Board had noted its official and personal regret at the death of a former honorary member, Dean Emeritus Frederick S. Baker.

Upon the death of William S. Rosecrans on July 28 the Board recognized his many contributions to the national, State and local welfare, and especially his dedicated interest in conservation as demonstrated in part by his fourteen years service as Chairman of the California State Board of Forestry. Further, the Board set aside and dedicated in the Mountain Home State Forest, a grove of Sequoia gigantea, which is hereafter to be known as the William Starke Rosecrans Grove.

Fellow members commended Kelly B. McGuire for having received an Award of Merit from the American Association for Conservation. Chairman Carter presented the award to Mr. McGuire at the annual meeting of that Association.

PERSONNEL

In June 1965, James Kenneth Mace, Deputy State Forester in charge of the Southern California District retired from active service. Jim was born on a ranch in Amador County. He had worked for the U. S. Forest Service for a short time, and then determined to obtain a formal forestry education. He began his career with the California Division of Forestry in 1938 as Ranger of Calaveras Unit. Immediately upon the Pearl Harbor attack he was promoted

to Deputy and assigned to Sacramento Headquarters, principally to represent the State Forester as liaison with military and civil defense officials. He was transferred to head the new Sierra Cascade District in 1943, then to Southern California in 1945, there to remain until his retirement. Mace was a tireless advocate of improved techniques and increased effort in fire prevention and control, and he made several appearances across the nation at meetings of fire specialists to inform them of his concepts.

Michael O. Schori was assigned to succeed Mace in the South. Schori obtained a bachelor's degree in forestry at the University of California and went to work for the Division in 1947. He has enjoyed wide administrative and staff experience throughout his career.

On January 19, 1965, Deputy State Forester Eugene H. Bertsch died at his home in Sacramento. He was in charge of the Division staff section of Fire Prevention and Law Enforcement. Twenty-eight years earlier Bertsch had enlisted as a member of the Civilian Conservation Corps. He enjoyed the life and became a dedicated employee of the Division. He worked in various positions in Southern California prior to promotion to his Sacramento assignment. Deputy Bertsch was succeeded by Howard E. Moore, recently Assistant to the District Deputy of San Joaquin District. Moore is a graduate of the University of California School of Forestry who entered Division employment immediately following his naval service in World War II.

Two veteran Rangers retired in 1965. On April 30, Miles H. Young ended 38 years of almost continuous service as a Ranger in a half dozen Ranger Units. In his first years of employment after 1927 it was impossible to maintain the regular Ranger force throughout the winter months because there was insufficient salary money. Ranger Lester H. Gum had been an Assistant Ranger in the U. S. Forest Service before he began his career with the Division in 1931. Gum served as Ranger in charge of several Units, but spent 24 years at his last assignment in Santa Cruz. The respect and affection in which both men were held by friends and associates was amply evident at the respective retirement parties held to wish them a happy departure from State employment.

At mid-season 1965 there was a total employment of 4400 persons by the Division. Of this total, approximately 1900 were so-called seasonal positions. Most of the latter included firefighters assigned to the 234 crew stations maintained to protect forest and watershed lands. A breakdown of primary organizational locations of assignment for full time employees was approximately as follows: Sacramento Administration including Davis Warehouse-Shop-Nursery, 140; the six District Headquarters, 258; at Conservation Camps, 380; all other field assignments, 1750.

THE FIRE SEASON

Weather behavior during 1965 in California was unusual in several respects. From a wildfire standpoint conditions were very favorable. Except for heavy wind throughout four days of mid-September and the subsequent fire damage during this crisis period, a new low fire incidence and loss record would surely have been established.

At the start of fire season the water situation was good. That is to say, reservoir storage was high and ground water tables up. Only on the north

coast had precipitation been generally below normal. After the recent severe floods the local citizens were no doubt entirely satisfied. Much of the timbered area of the State never developed more than a springtime fire hazard during the entire year.

Temperatures were below normal prior to September. July and August brought rains; and fortunately, during the September crisis in the north there was rain in the normally very dry region of southern California. By the middle of November the forest fire season was ended statewide.

Upon the 28,726,000 acres of timber and watershed land protected from wildfire by the State Division of Forestry there had been burned up to the 10th day of September a total of 21,729 acres. This burn represented approximately 18 percent of the five-year average. Six hundred fewer fires had occurred than is normally expected by that date.

On the day and night of Wednesday, September 15th unusual air pressure conditions, high and low, surged upon the Pacific Northwest and western Canada. This caused the rapid development of very strong northeast winds over California as far south as Modesto.

Early on Thursday winds at Mt. Saint Helena registered 70 miles. By 9 a.m. the lookout tower was bearing the pressure of gusts exceeding 100 miles per hour. From Red Bluff southward into the Sacramento Delta continuous winds sometimes gusted to 50 miles per hour.

During Thursday and Friday in all lands under direct protection of the Division there was a response to 499 fires (exclusive of other runs, such as false alarms and mutual aid to other agencies). Two hundred and eighty of these fires were in the timber-watershed zone, although 79 were confined to structures or vehicles by prompt suppression action. North of San Francisco Bay and the County of Mariposa there occurred 123 forest and 45 rural or structural fires.

Statistically, as well as practically, the most serious aspect of the situation is found in the twenty-two fires which exceeded more than 300 acres in size within the timber-watershed area. Six of these burned more than 10,000 acres each; and four burned between 5,000 and 10,000 acres. In these two days 212,228 acres were burned. The total burned area statewide had in these few hours suddenly jumped from one-fifth to nearly twice the five-year average. This situation presents a dramatic instance of the "crisis period" which must often be faced by California wildland fire protection agencies. Fortunately, through the spirit and practice of mutual assistance, practically the combined available resources of all agencies can be brought to bear at the crisis areas and to "cover in" where forces have been depleted.

Eighteen of the large fires occurred in the North Coast District. Napa and Sonoma counties were hard hit, as they had been exactly one year earlier. Five large fires burned in the northern Sierra Cascade District and two in the Central Sierra. It is important to note that 100 additional fires were started in the northern districts during this crisis period. These were attached and extinguished promptly. Forty fires also needed attention in the southern districts, a fact which had a bearing upon the decisions to dispatch aid northward during the crisis.

The trouble actually started about noon on Thursday the 16th when two fires were reported east of Oroville and two others in Lake and Solano counties. With the crisis potential so high the obvious strategy called for a heavy commitment of suppression forces promptly at each fire area. Assistance from local fire services was used to the greatest degree. The danger of too rapid deployment of State forces was in the minds of all dispatchers. During such a time troubles could quickly expand and multiply. As a matter of fact, one peculiarity of this crisis period was the necessity of temporarily manning some regular Division stations with city or rural fire units and, in several cases, with Forest Service personnel from adjacent National Forests. It was impossible to move up Division personnel fast enough from beyond the high incidence zone to cover all the vacated stations.

It was obvious that a conflagration emergency now existed in northern California. By early afternoon crews and fire trucks from the south were en route to stations in the central portion of California to fill in behind local forces already dispatched to fire duty.

During the afternoon and evening of September 16 there was a great migration of firefighting personnel and fire equipment toward the North Coast District. Approximately 1100 men were dispatched. Assembled and assigned to duty in company with the resident forces of the area, they represented nearly 2500 men in total.

The general composition of the fireline and support force assembled there indicates the development of fire protection systems and mutual planning among all of the fire services at this time. Regular Division forces totalled 640 men, of which 147 had been dispatched from other Districts. The fire bosses and other organization managers were selected from among these professionals. There were 780 prison and Conservation Camp inmates. Nearly 900 men were recorded as volunteers or city and fire protection district firemen called under mutual aid agreements. Some crews reported with firetruck equipment provided through the California Disaster Office for just this purpose. That agency as well as the State Fire Marshal sent representatives to the several fires.

From all available sources, the Division, mutual aid, and by hire, there were utilized in this North Coast District during the brief crisis period: 13 air tankers, 9 patrol planes, 10 helicopters, 98 bulldozers, 301 fire trucks and 326 other miscellaneous vehicles. The latter would include such service items as rolling kitchens and mobile weather stations. National Guard aircraft were utilized to fly inmate crews from Chino and Tehachapi to Hamilton Field in Marin County.

This briefly described exercise of promptly mobilizing fire fighting forces in the general area of Sonoma-Napa-Lake counties represents a commendable dispatching achievement in itself. But it did not represent the total problem of logistics and fire attack. In the Central Sierra District there were numerous fires which were prevented from developing into crisis problems by prompt and vigorous attack. There was also the need to establish field fire camps on the large Applegate and Wolf Creek fires. Down in Contra Costa County the Windy Point fire burned only 700 acres but required the installation of a field camp.

North, in the Sierra Cascade District three large fires were handled from hastily established field camps. In this District also a wide use of volun-

teers and professional firemen was necessary. U. S. Forest Service cooperation was an important element. Fifteen hundred men were working under the direction of Division fire control leaders in this district.

It happened that the incidental causes for fire to start during this few hours of crisis occurred at relatively low elevations, and therefore flashier type fuels were exposed. This was not universally true as witnessed by the Austin Creek fire of Sonoma County where much valuable young redwood timber was destroyed. Nevertheless, there were heavy losses in homes, farm buildings, hay, fences, other industrial values, and range land.

The speed with which some of the fires traveled was amazing. For example, the Sites fire started at 5:25 p.m. on September 16, nine miles northwest of Willows, Glenn County. In two hours its head was 17 miles to the south in Colusa County. Volunteers, with organized city and rural fire departments and limited Division of Forestry forces kept up a spirited continuous attack on the fire's head and flanks. Winds of 60 to 75 miles per hour were driving the flames. A local resident reported to the fire boss that the fire outran his 4-wheel drive automobile on the open range. The fire perimeter was contained six and one-half hours after it started. Yet it had run for nearly 30 miles with a front from four to seven miles wide. Land owners easily if sadly totalled up an estimated damage of one and a third million dollars from this single fire.

Fires driven before high winds can roll over wide barriers and throw spot fires far ahead. The Applegate fire in Placer County presented an extremely difficult control problem with spots of flame bursting out in structures and grass or brush spots that were often surrounded by plowed orchards.

When the two-day crisis was over the first listing of obvious destruction caused by 26 large fires was 59 major and 377 minor structures, 26 vehicles and 2095 head of livestock, with a considerable loss of fences, forage, utility poles, and so forth. This represented an estimated three and one-half million dollars in material destruction (and was 41 percent of the seasonal total of similar fire loss on Division protected timber-watershed lands).

It is virtually impossible to estimate the money cost of attacking and extinguishing fires on such a massive scale. The continuing maintenance cost of regularly organized city, rural and wildland fire services in California would probably exceed the entire budgets of some States. Surges of intensive action naturally result in increased operation costs which would be difficult to calculate. The California Division of Forestry found it necessary to make emergency expenditures beyond its regular budget of almost a million dollars because of two September days of north wind.

After such serious fires the responsible fire agencies generally review the action and try to establish some pattern of cause and effect. In this case the cause was very well recognized. There had occurred many a wind-driven September fire between the Berkeley disaster of 1923 and the North Coast holocaust of 1964.

Three paths of action are open to the fire damage prevention specialist. The weather element in the cause pattern might be capricious, but it must be assumed to be a continuing probability in any basic plan of defense. Therefore, a project may be established to eliminate or fireproof the vulner-

able fuel. After a fire starts it may be overwhelmed in the incipient state by the power of the suppression force. Thirdly, action may be taken prior to the fire to eliminate the actual ignition of all unwanted fires.

An efficient and dedicated fire department can accomplish amazing feats in the extinguishment of wildfire, even under very difficult conditions. There is a vast quantity of recorded evidence to support this contention. But the wildfire driven before gale winds generally offers no recognizable perimeter of attack. It burns materials thought to be practically non-flammable in places thought to be beyond the reach of external flames. For example, during an inquiry into the effect of shingle roofs during the recent large fires, competent firemen reported: We cannot precisely say if the houses burned from the floor upward or the roof down. Suddenly they were enveloped in flames.

A basic axiom in the planning of fire protection stipulates that, unless normal conditions are modified, there will be a constant unchanging risk of the incidence of fire. Whenever the ignition conditions improve, more fires will quite naturally originate. Adverse weather (fast air movement and dryer fuel) therefore causes more fires to become ignited and more fires to overwhelm the initial extinguishment effort of men and their tools.

Upon such a well recognized premise the State Forester developed a Fire Prevention Project in which four hundred field inspectors would be added in three steps over a six-year period to the forces of fire agencies protecting State and private forest-watershed lands. The approximate annual operational cost of the full supplementation would represent some eight million dollars. The objective to be accomplished would be more intensive field inspection to reduce fire risks and hazards in the manner prescribed by law.

TIMBER AND WATERSHED FIRES ON STATE AND PRIVATE LANDS-(Zones I & II)

(Does not include structural or vehicle fires, or any fires on federal land or within incorporated cities.)

<u>Protecting Agency</u>	<u>Acres Protected</u>	<u>No. Fires</u>	<u>Acres Burned</u>	
			<u>Timber</u>	<u>Watershed</u>
Cal. Div. of Forestry	27,967,581	3,248	14,045	207,773
U. S. Forest Service	5,232,230	596	4,128	1,501
Nat'l Park Service	42,741	---	---	---
Hoopla Indian Reservation	2,326	---	---	---
Kern County	2,177,255	207	---	4,392
Los Angeles County	673,922	80	15	278
Marin County	245,190	146	15	1,770
Santa Barbara Co.	742,923	119	---	971
Ventura County	385,190	118	---	113
TOTAL	37,469,358	4,514	18,203	216,798

NATIONAL FOREST LAND (federal owned only) in California. Number of fires: 2082; acres burned, 9825.

NATIONAL PARKS (federal land in California). Number of fires: 148; acres burned: 33.

DIVISION OF FORESTRY PROTECTION AREA ONLY. Number of NON-FOREST fires in timber-watershed, 2398. Number of fires of all types attended by Division in RURAL area (Zone III) protected by Division under contract: 7787 fires which burned 19,448 acres of flammable vegetation in addition to structural values.

DIVISION OF FORESTRY BUDGET - Fiscal Year 1965-66

(1) GENERAL SUPPORT (Excluding Emergency Fire)	\$ 27,255,755
(2) FOR OTHER AGENCIES (Protecting State and Private State Responsibility Land)	3,670,308
(3) EMERGENCY FIRE FUND	1,100,000
(4) BLISTER RUST CONTROL	75,000
(5) INSECT CONTROL	35,800
(6) FOREST AND FIRE RESEARCH	<u>326,983</u>
(7) TOTAL ABOVE	\$ 32,463,846
(8) CAPITAL OUTLAY	10,310,880

Explanation of above budget:

- (1) The Support Budget for the Division of Forestry was increased approximately \$1,940,746 over the 1964-65 Fiscal Year level. The increases are attributable to the following:
 - (a) July 1, 1964 salary increase \$1,012,800.
 - (b) A State pilot program initiated to provide a working model for youth work and training centers was discontinued. The Oak Glen camp used in the state's pilot program was converted to a federally supported Job Corps camp, in which State operations are fully reimbursed. This resulted in a budget reduction of approximately \$396,000.
 - (c) Conservation Camp activations and expansions: \$318,265 increase.
 - (d) Reductions of duty week for the Fire Crew group (except for the Forest Firefighters) to 96 hours: \$609,499 increase.
 - (e) Reduction as a result of restoration of the duty week for Forest Firefighters to 120 hours: \$170,033 reduction.
 - (f) Range Improvement Crews were deleted by the Legislature as recommended by the Legislative Analyst: \$49,278 reduction.
 - (g) Seven workload positions (3-Automotive Maintenance Foremen, 1-Air Attack Coordinator, 1-Lead Dispatcher and 2-Bench Mechanics) were added at an estimated cost of \$56,773.
 - (h) Increase to the Equipment allocation: \$176,772.
 - (i) The remaining difference can be attributed to merit salary adjustments and an increase in the operating funds to cover price increase for doing the same level of business as recognized by the Department of Finance.

- (2) The allotment of funds to other agencies for the protection of State and private land for which the Division is responsible has been increased \$286,302. The increase can be attributed to a 5% salary increase, change in duty week to 96 hours and a price increase in recognition of the increased cost of maintaining the same level of service.
- (3) Emergency Fire Fund is a basic appropriation of \$200,000. The need has exceeded \$2,000,000 in an extremely bad fire year. Augmentations from so-called Governor's Emergency Fund are requested when the need arises. (Anticipated 1965-66 expenditure \$1,100,000).
- (4) Paid to the U. S. Forest Service in matching the expenditures for Field projects.
- (5) To be expended in cooperative control projects in the areas of serious infestation.
- (6) Specified items of Research and Development described under that heading in this Report.
- (7) The totals set forth represent the net expenditures of the Division (see also (8)). Gross expenditures, approximately \$39,800,000, are reimbursed by
 - (a) Rural-Structural fire protection \$4,700,000 (Contracts with counties and fire districts).
 - (b) From U.S.D.I.; fire protection of 3.6 million acres of scattered public domain lands \$478,000.
 - (c) From the U. S. Government in support of the Oak Glen Job Corps Center \$453,000 (does not include Capital Outlay).
 - (d) Other reimbursements - collection for services to employees, rentals to other agencies, services to other agencies, etc., \$1,740,012.
- (8) Funds available for State building program; includes \$5,500,000 earmarked for Conservation Camp sites, construction and equipment. The State building program appropriations are available for three fiscal-year periods after appropriation.

RESEARCH AND DEVELOPMENT

The Division of Forestry has continuously been interested in research into most aspects of forest and wildland management, and especially in the development of more efficient methods of pursuing its own programs. Practically since the creation of the Board of Forestry eighty years ago funds have been allotted to hire specialists or to cooperate with agencies equipped to engage in scientific research. In addition, there has been a continuous effort within the organization to improve in a practical way the equipment and techniques employed in the operational program.

In respect to the budget sum of \$181,603 for research and development the following itemization of projects and programs can be made.

For mapping of soil and vegetation in wild lands, \$121,908 was specified. This work began in 1947 and has continued as a cooperative program with this Division, the Pacific Southwest Forest and Range Experiment Station, and the University of California participating. During 1965 field mapping of 355,000 acres was completed. Four quadrangle maps in Shasta County were printed and made available for purchase.

The San Dimas Forest Experiment Station, where the natural relationships of soil, water and brush vegetation have been under continuous study for 40 years, was allotted the sum of \$23,472 as a matter of general cooperation.

Also to the Pacific Southwest Forest and Range Experiment Station several sums were made available as the State's share in specific cooperative projects. The subjects and sums pertain to continued research in the following matters: fire climate, \$22,000; fire retardants, \$11,000; fire prevention, \$16,440; fuel breaks, \$17,640.

The School of Forestry at Berkeley engaged in a number of important but relatively small scale research projects largely on behalf of the Division of Forestry. The respective subjects and sums allotted by the Division are as follows:

Economics of fire protection	\$ 9,000
Planting Stock Physiology	17,692
Forest Growth Prediction	15,021
Seed Tree Effectiveness	17,022
Bark Beetles	9,544
California Hardwoods	6,800
Dwarfmistletoe	7,930
Forest Rodents	9,414

INTENSIVE FIRE PROTECTION AT OROVILLE RESERVOIR

As authorized by law, the State Forester enters many agreements to provide fire protection for other agencies. Twenty-five counties have made agreements under which the State Forester provides leadership, fire crews, fire trucks and other necessary facilities to accomplish fire protection on areas where the State has no direct obligation for the prevention and the suppression of forest fires. The State may also contract to provide a greater intensity of protection than would normally be provided at State expense, or to continue protection into the non-forest fire season.

An agreement was made with the State Department of Water Resources on March 1, 1965 which stipulates that the Division of Forestry is to furnish intensive fire protection in the immediate area of construction around Oroville Reservoir Project in Butte County. This intensive protection was deemed necessary because of the increased fire risk on and adjacent to highly inflammable forested lands.

The Division is to provide five forestry Foremen and a supervising Associate State Ranger. Their primary purpose is to inspect equipment being used in construction around the reservoir area. Aside from the dam building project itself, five different contractors are involved in the building of roads and other secondary projects around the periphery of the lake which will form above the dam. A major project is the clearing of a belt of vegetation 260 feet wide around the future shoreline, a distance of 167 miles. However, eighteen separate areas of vegetation to improve fish habitat will be left. A special fire hazard is caused to exist with this residue of vegetation. As a matter of fact, some ten thousand trees will be felled and anchored down so that they will not float, and will thereafter remain under water throughout most of the year.

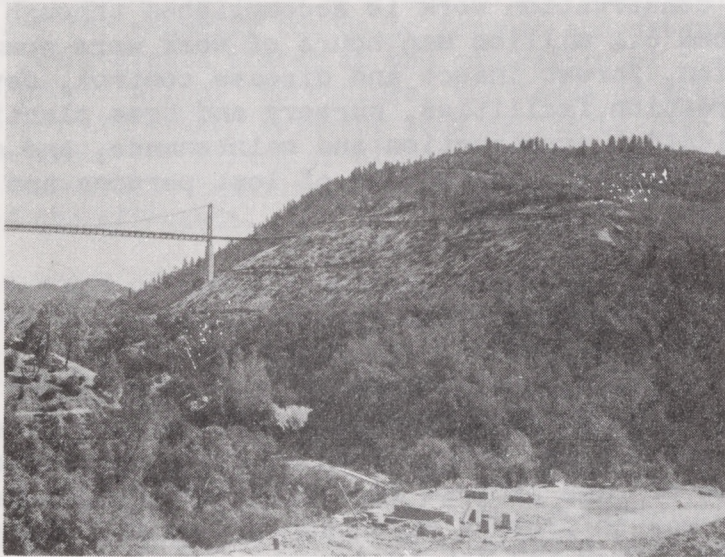
These peripheral contractors employ about three hundred and twenty-eight men and use a total of two hundred and three pieces of equipment, including bull-dozers, chainsaws, various earth moving equipment, welders and other implements which may cause fires. From the first of March until the end of 1965, the Division of Forestry patrolmen made over ninety-eight hundred contacts with the employees of the contractors and made over forty-eight hundred inspections of their equipment. Four hundred and eighty-two violations of fire law or local regulation were found. These troubles were generally found to be in faulty spark arresters on motorized equipment or chainsaws, and the lack of required tools in the hands of work crews or on the equipment.

During this same period 96 fires occurred in the area receiving special patrol by the Division of Forestry. Most of the fires were quickly extinguished by the workmen who by this time were well aware of the high fire potential. Division personnel took action on eighteen fires. The largest burned 125 acres and was caused by a grinding machine. Tractors caused most of the fires, being responsible for fifty-two. Of these, 44 occurred in the bellypan of the tractors riding over vegetation, and the others were caused by friction of the bulldozer blade against rocks.

During the most hazardous fire days operations were partly or totally shut down in accordance with prior arrangements with the contractors. During

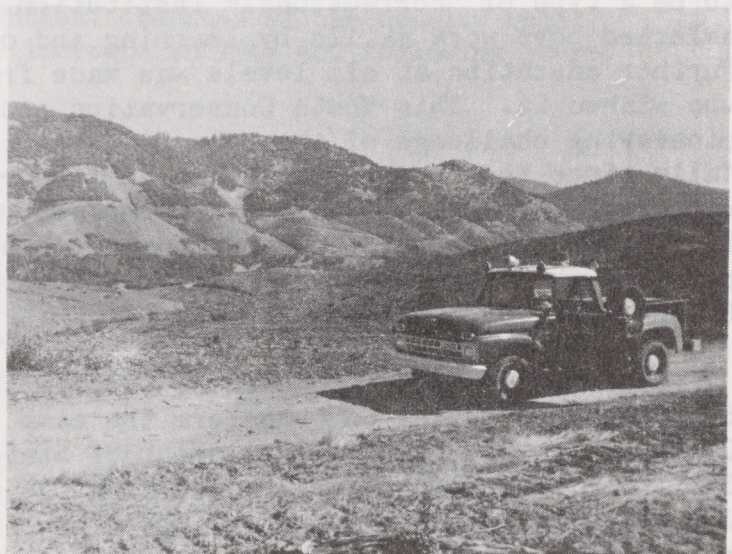
1965 there were seventeen days of high fire load index in which there was a partial shutdown of operations. Another aspect of the ground-clearing work, which required close attention on the part of Division of Forestry employees, was the burning of debris. During 1965 it is estimated that piled and scattered brush and slash over an area of 3570 acres was burned. Such burning was permitted only when it received the approval of a Division inspector.

It can well be concluded that this intensive fire protection established around the Oroville Reservoir was definitely successful. Probably any one of the accidentally caused fires could have resulted in a much greater cost in fire suppression than the entire cost of this added protection, to say nothing of the consequent destruction of forest values. In addition to the intensive fire prevention program, the Division patrolmen had an opportunity to distribute 1,162,400 pieces of printed fire prevention material to the many visitors who traveled to the overlook area to watch the dam construction project. It is estimated that to date nearly a million seven-hundred thousand persons have visited this area



left - Highway bridge which will span the great future lake above Oroville Dam. Note the area of cut and piled brush ready for burning along the lake shore strip.

right - Division of Forestry patrolman's light truck at the bottom of future Oroville Reservoir. Note the shore line clearing in the background.



CONSERVATION CAMP PROGRAM

The Sierra Conservation Center near Sonora was put into operation by the State Department of Corrections in 1965. This institution includes a special forestry training unit consisting of one Ranger and six Assistant Rangers. With similar units at the Southern Center near Chino and California Conservation Center at Susanville, this means an assignment of 18 training specialists who are Division of Forestry employees. Their duty is primarily to provide (for 100 inmates at each Center) a five-week course in basic work and firefighting skills. During this process an effective classification screening of men most adaptable to camp life and work is carried out.

During 1965 thirty-two adult inmate and seven Youth Authority Camps were operated jointly with the Division of Forestry. From the latter base camps, three 20-ward spike camps were maintained. Camp population reached 2440 adults and 360 wards. Two new adult inmate camps and one youth camp are scheduled for activation during 1966. Four others are in early processes of site acquisition and development.

A great deal of valuable conservation work is accomplished through the camp program. During 1965 some 6.4 million man hours of work were spent on fire fighting, hazard reduction, forest insect and disease control, development of public camps and recreation facilities, nursery and tree planting work, truck trail and communication construction and maintenance, and also such highly appreciated tasks as search and rescue of lost persons and emergency assistance during civil disasters.

OAK GLEN JOB CORPS CONSERVATION CENTER

At a camp site known as Oak Glen situated a few miles northwest of Beaumont, there was once a Civilian Conservation Corps Camp of the Depression Era. In 1949 this became a prison honor camp. Then in 1963, by special act of the Legislature, a new type of camp program and social experiment was established here. The intent was to provide an outdoors camp for young men between 16 and 21 who were unemployed and not in school. In no sense was this to be a type of "correctional" institution. The objective was to teach the selected boys work skills by learning and doing under competent supervisors. Further education at all levels was made freely available to those enrollees who wished it. This Youth Conservation and Training Program presented a pioneering challenge of the type Division of Forestry men had met successfully since the first Labor Camps for hungry transients were created in the winter of 1931-32. The new Oak Glen Camp, under Ranger Robert Green's immediate direction, conquered its many problems one by one. In fact, the project was being carefully scrutinized as a pattern for the developing Federal Job Corps Program.

On June 1, 1965, the State of California contracted with the Office of Economic Opportunity to transform the camp into a Job Corps Conservation Center, with the regular complement of State Forestry personnel in charge. The State is responsible for operating the camp in accordance with basic Job Corps policies. Naturally, there have been many administrative problems to smooth out. This has been, and is being accomplished.

While the corpsmen are selected by the Job Corps instead of a State agency, the fundamental goals and policies have not materially changed. A

major difference appears to be an increased emphasis upon schooling and counseling under the Federal program. Yet the young corpsmen are still expected to learn what it means to construct truck trails and firebreaks and to fight forest fires under the paternal eye of a State forestry foreman who is especially qualified for this type of work.

TIMBER TAXATION

Most of the activities in timber taxation in 1965 occurred at the legislative and policy level. After study and hearings, Revenue and Taxation Committees of both the Senate and Assembly released published reports on this subject early in the year. These are entitled "Taxes on Extractive Industries" and "Taxation of Property in California (Part 5)", respectively.

The Legislature also enacted Chapter 1847, Stats. 1965, to amend the Revenue and Taxation Code. The new law is directly related to tax exemption of young-growth timber as provided in the State Constitution. It is now necessary for maturity boards to inspect and determine the maturity of exempt young-growth timber at the expiration of the 40-year period prescribed in the Constitution. Heretofore, the issue of maturity was not raised until the respective county assessor took action to levy an assessment. The law also requires the filing of affidavits for exemptions. At the close of the year the Board of Equalization was getting ready to adopt procedures and the form of the affidavit.

The Board of Forestry gave special attention to the subject of timber taxation at a Berkeley meeting on December 1. Consultants to the two legislative committees and representatives of the Board of Equalization, the County Assessors Association, the University of California, and the industry expressed their views. The Division published the papers presented at this meeting.

Declaration of the maturity of young-growth timber was at a low level in 1965, mainly because of the mentioned developments. Only timber on six properties, having 606 acres, were declared mature in Mendocino County. The cumulative total of such declaration at the end of the year was 305,785 acres on 735 properties in seven counties. Because of the new law this activity will no doubt show a marked increase in 1966 and following years.

STATE FORESTS

The Division manages 70,238 acres of forest land in eight State Forests that are representative of California's varied timber types. These Forests provide a laboratory for demonstration and experimentation of forest land management including lumber and Christmas tree production, watershed management, recreation, and combination uses of wildland. The four largest Forests embrace about 69,000 acres. Here the management is directed by a staff of professional foresters.

Using sustained yield cutting plans, 1965 operations produced 31 million board feet of timber and 3600 Christmas trees and numerous miscellaneous products with a total value of \$714,855. Cumulative Forest receipts transferred into the State's general fund (1946-65) have amounted to \$7,549,050.

The counties in which the Forests are located received \$41,472 of in-lieu property taxes for 1964-65, and a total of \$480,000 since the Forests were acquired by the State. The allowable cut volume continues to rise as utilization standards change and increased growth becomes available. As the over-mature timber is removed a large percentage of the harvest is young-growth. Young-growth stands are often very productive. In the Caspar Creek drainage on Jackson State Forest the volume is commonly 100 M bd. ft. per acre at 85 years of age. A cooperative experimental planting of Guadalupe and Cedros Island pines on Jackson State Forest has resulted in good survival. An attempt to grow and preserve these species will be of continuing interest since they are closely related to Monterey pine if indeed they are not the same species.

On Jackson State Forest the second measurement of the growth plots of the continuous forest inventory has been completed and is being computed with electronic data processing equipment in Berkeley. Latour State Forest's prism or variable plot based continuous forest inventory is progressing with over half of the permanent plots (127) established at the end of 1965.

Approximately 515 acres of old-growth timber involving 2.7 million board feet has been prepared for sale on Bogg's Mountain State Forest. This over-mature, deteriorating stand is to be sold in 1966 and 1967 and will be the first timber sale on this Forest since the State acquired the property. The first forest manager assumed his duties there in March 1965, and during this year two 10,000 gallon water tanks were constructed as a source of water for campgrounds and fire protection.

Recreation and water development continues on the Forests. The Frasier Mill Campground was completed at Mtn. Home State Forest, bringing the number of improved campsites to 44, plus 17 unimproved spaces for self-contained campers or trailers. A 40 percent increase in public use was noted on Mtn. Home where 14,150 visitor-days and 13,100 camper-days were recorded.

The large cooperative watershed project continues in Jackson State Forest on Caspar Creek drainage. Considerable effort was expended during 1965 to remove the sediment which nearly filled one of the two debris basins on the undisturbed watersheds. The stream ecology phase of the Caspar Creek study was stepped up during 1965 so that the detection and measurement of any effects resulting from logging activities on the South Fork can be studied for about two years prior to logging. The "control" North Fork watershed is not to be logged and will be the site of simultaneous studies.

Hazard reduction, road construction and maintenance, and hand labor for experimental work is accomplished by Conservation Camp crews on all forests.

FOREST PRACTICE ACT

Compliance with the Forest Practice Rules continued at a high level in 1965. There was a significant drop in the number of small timber operators conducting independent logging operations, but an increase of contract loggers working for large operations. To assure compliance with the Forest Practice Rules, many timber owners and operators require bonds or withhold money from contract loggers until areas pass inspection. The fact that the State Forester (by virtue of 1963 law) may deny a permit or permit renewal until existing rule violations are corrected has aided in securing better compliance.

The State Forester found that the Forest Practice Rules were in need of amendment due to 1965 legislation which recodified portions of the Public Resources Code. With this advice the Board of Forestry formally adopted an "order" that the several forest practice committees review the rules of their districts. At the close of 1965 the four district committees were studying their respective rules for possible amendments and making plans to hold public meetings.

During 1965, 300 new timber operator permits were issued and 1,053 renewed, involving \$15,750 in license fees. Some 2,000 timber notices were filed by timber owners or timber operators notifying the State Forester of proposed timber operations. Operators reported cutting 5.48 billion board feet of timber in 1964, which was approximately 15 million board feet more than was cut in 1963.

The Division made 1,842 forest practice inspections. Statewide, 91 percent of all rules inspected for were found to be in compliance. Inspectors observed 1,023 infractions of the rules as compared with 1,253 infractions in 1964. The rules most frequently found deficient were snag disposal, fire plans, erosion control, slash disposal and firebreak requirements in slash areas.

Requests by timber operators for special inspections continue to increase. This is due to several things. Operators who have been warned of permit denial or who have been denied their permit because of rule violations often request reinspection of their logging areas to show their compliance. Several timber owners and large timber harvesting organizations request several inspections before releasing bonds or monies withheld against timber operators to insure compliance with the Forest Practice Rules.

Most law enforcement in 1965 was accomplished through administrative action. The Division transmitted 626 violation notices. In addition, many letters and follow-up meetings were held with operators to improve compliance with the rules. About half of the areas where repeat inspections were made showed ultimate full compliance with the rules. Some infractions of rules were minor and did not in themselves justify revocation of a timber operator's permit. Others were more serious. Two cases were resolved through the local district attorney or court action. Nine cases involving persistent violation of the Forest Practice Rules were filed with the State Forester in 1965 for denial of timber operator permits. Three of these

operators corrected all violations and subsequently permits were issued. The other six operators discontinued timber operations. They will be denied permits until their violations are corrected.

Affidavits declaring that 11,864 acres of timberland will be devoted to purposes other than growing timber were filed in 1965 by 49 owners. This is the lowest acreage since 1950. To improve grazing accounted for about 80 percent of the acreage, while the balance was for other agricultural uses, mining, construction, and urban development. Since 1946, a total of 2,586 owners have declared their intention to devote 796,053 acres of timberland to purposes other than timber growth. In 1964 a survey was made by the Division to determine progress being made on these areas since 1946. The data was analyzed in 1965 and showed that 14 percent of the timber acreage was overstated. Some 5 percent of the acreage has remained uncut. About 16 percent has been fully converted to another use. Conversion has been abandoned on 12 percent of the acreage and on some 66 percent of the acreage conversion is incomplete.

Eleven alternate plans were approved by the Board of Forestry in 1965 which provide for greater silvicultural or protectional management of the timberland than the Forest Practice Rules for which the plans substitute. At the close of 1965 there was a total of 52 alternate plans in effect.

SERVICE FORESTRY

The Division employs ten Service Foresters to help landowners solve many and varied problems of forest and land management in California. They are headquartered in Fortuna, Willits, Santa Rosa, Redding, Oroville, Camino, Sacramento, Fresno, Monterey and Riverside. The foresters assist in forest reproduction, timber stand improvement, marketing and most other phases of land and timber management that will help cooperators realize the full potential of their resources.

Quite naturally, the owners of smaller tracts of wildland do not have the knowledge required to provide practical and efficient management. About 30,000 of these owners are responsible for the management of approximately 3.5 million acres of commercial forest land. There are also several million acres of non-commercial forest land upon which various land management problems are considered by the Service Foresters.

The present and future productivity of this land is a speciality of the service forester and is vital to the economy of the State and especially the economy of the forested counties. California exceeds all other States in the value of forest products, the number employed in forest industries, and the total forest industries payroll.

In 1965 the Service Foresters received 2,768 requests for assistance. More than 2,100 owners of 280,000 acres of timberland were given forest management assistance or advice. More than 180 owners were referred to

consulting and industrial foresters because the size and complexity of their problems deserved more intensive consideration.

Increased emphasis continues to be placed on the multiple use aspects of private forest land management so that both the owners and the public will benefit. The Service Foresters directed the landowners attention to recreation, water, wildlife, special forest products, grazing and other land management possibilities in addition to timber management. Also, considerable time was spent on insect and disease control problems.

Under the Cooperative Forest Management Act of 1950, the U. S. Forest Service reimburses about 30 percent of the cost of the service forestry program in California.

BRUSH RANGE IMPROVEMENT

Ranchers and sportsmen used fire in the management of 67,874 acres of brush range land in California during 1965. Permits, which included recommendations regarding the use of fire, were issued to 209 individuals. These permittees conducted 156 controlled burns of which 22 were cooperative projects involving two or more ranchers. Division fire control forces stood by in the event of a fire's escape during the burning of 25,255 acres. Range specialists advised landowners of other treatment - mechanical preparation, seeding, and sprout control - used in combination with fire.

During 1965, 31,200 acres were re-burned, 15,858 acres of brush were treated with mechanical equipment prior to burning, and 19,496 acres were seeded with forage plants. Nineteen of the permit burns were made exclusively for game habitat improvement.

Activity in this program was at about the same level as the past four years. Since 1945, about 1.8 million acres of unwanted vegetation have been treated by fire in California, not including repeat burning projects.

EMERGENCY REVEGETATION

Many of the large watershed fires which occurred in Northern California during 1965 necessitated quick appraisals to determine the immediate need for protective revegetation prior to expected winter rains. The Division acted cooperatively with counties and federal agencies in four revegetation projects involving seeding quick growing ryegrass on 13,120 acres of privately owned land. Adjoining federal lands needing treatment were also seeded. Seeding done by contract for projects conducted by the Division cost from \$0.75 to \$0.91 per acre. This cost was shared by the agencies involved.

Since 1956, there have been 214,150 acres of critical burned watershed treated in this manner to secure the exposed soil against movement under winter rain. Evaluation of the results of these seedings, improvement of techniques, and testing of promising plants continue as important studies for Division watershed specialists.

NURSERY AND REFORESTATION

The Division depends almost entirely on cone crops from California Forest lands for its nursery and reforestation programs. The crop in 1965 was a near failure with only medium crops in isolated locations. However, Conservation Camp crews were able to collect about 5,600 burlap sacks of cones which will yield an estimated 8,400 pounds of clean seed.

There were 2,912,000 seedlings distributed from four Division nurseries in the 1964-65 season, some 400,000 more than during the preceding year. The State Forester recommended that prices for nursery stock be increased by 50 percent to help offset production costs. These prices, approved by the State Board of Forestry, became effective at the beginning of the 1965-66 season.

Reforestation activities in the State continued to increase. Eleven thousand acres of State and private land were reforested, 2,000 more than in 1963-64. Private land seeded amounted to 7,900 acres. Some 5,600 acres of clean-logged land were seeded under an approved departure from the Forest Practice Rules. Reforestation study activities increased on State Forests and at Division nurseries as did cooperative studies on five private ownerships. Seeding and planting under various conditions of weather, site and planting stock were undertaken.



New seed extraction plant at Davis Nursery. Here 275 sacks of cones can be opened and the seeds removed within a 24-hour period.

The State Forester's 10-man Advisory Committee on Reforestation Methods and Procedures met twice during the year. A spring meeting was held in Los Angeles County where reforestation problems confronted by the Los Angeles County Department of Forester and Fire Warden were observed. At higher elevations in that county excellent survival is being obtained, using special methods of site preparation. The fall meeting of the committee was held in the city of Mt. Shasta. A tour of Forest Service experiments in chemical brush control revealed a possible method of releasing suppressed planted seedlings.

FOREST PEST CONTROL

Defoliators were the principal insect problem in California forests. The Division participated in two successful aerial spray projects against the Douglas-fir tussock moth, involving 58,000 acres in northeastern California. White fir sawfly was also prevalent, but required no direct control action. Bark beetle damage was low, except in southern California. There were nine direct control projects involving bark beetles in the south in which 3,864 trees were treated. A new needle miner, attacking red fir, was active in Yosemite National Park and Sierra National Forest. Other diseases, including rusts, dwarfmistletoe, needle cast, and blights did not increase their activity above 1964 levels. Deer continued to cause considerable damage, especially in the northwest part of the State.

Conservation Camp crews were used on blister rust control projects in Modoc, Lassen, Butte and Tehama counties. The Division assumed direct administration on all projects in Modoc County in 1965.

The California Forest Pest Action Council was concerned with the need to concentrate more intensively on such projects as biological evaluations of forest insect infestations, stockpiling a virus to be used in the control of Douglas-fir tussock moth, a survey method to determine the intensity of the root rot Fomes annosus, and increased research into forest diseases.

LONG RANGE PLANNING

A Planning Coordinator was added to the State Forester's Staff in 1965. This position was necessary to coordinate long range planning by the Division for such efforts as the State Development Plan and the Resources Agency Policy Study.

As our society increases in size and complexity the need for integrating long range comprehensive forest policies and plans with plans of other sectors of the economy is becoming more evident.

PUBLICATIONS OF 1965
by or in cooperation with the
Resources Agency/and being
directly related to forestry affairs

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- "Brushland Range Improvement - 1964", 20 pp.
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"Forest Pest Conditions in California - 1964", 20 pp. O.S.P.

"Decision Rules for Design of Forest Sampling Systems. A Contribution to Methodology Based on Computer Simulation" by Loucas G. Arvanitis, University of California Doctoral Dissertation, Sept. 1965, 169 pp.

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